REMARKS

Applicants thank the Examiner for the thorough examination given the present application.

Claims 1-4 are pending and claims 1 and 4 are independent. Claims 1, 2 and 4 are amended. No new matter is added. For example, amended claims 1, 2 and 4 are supported by Figs. 1 and 2 as well as the Examples of the present specification.

The Examiner is respectfully requested to enter this Amendment After Final, in that it raises no new issues but merely places the claims in a form more clearly patentable over the references of record. In the alternative, the Examiner is respectfully requested to enter this Amendment After Final in that it reduces the issues for appeal.

In view of the below remarks, reconsideration and withdrawal of the outstanding rejections are respectfully requested.

Issues Under 35 U.S.C. §112

1) §112, first paragraph

Claims 1-4 stand rejected under 35 U.S.C. § 112, first paragraph, as lacking written description support in the specification. This rejection is respectfully traversed.

Specifically, the Examiner has indicated that limitations of "an isolated threonine importer (claims 1 and 4)" and "by defecting the threonine improter from *Corynebacterium glutamicum* strain having a low threonine requirement (claims 2 and 3)" are not supported by the present disclosures.

Regarding the limitation recited in claim 1, based the present specification, especially Fig. 1 and Examples 2 and 3 disclosing preparation and isolation of a cloned DNA encoding the threonine importer from *Corynebacterium glutamicum,* claim 1 is amended to recite "an isolated DNA clone encoding the threonine importer from *Corynebacterium glutamicum*, wherein the threonine importer is encoded by a continuous DNA sequence from the 1,772nd base to the 3,025th base among DNA sequences with the SEQ. ID. No. 1." Also, claim 4 is amended in a similar manner. Thus, any new matter issues are resolved by way of the present submission.

Regarding the limitations of claims 2 and 3, claim 2 is amended to comply with the Examiner's suggestions. Applicants respectfully submit the relevant limitations are supported by pages 4-6 of the present specification and the Examples. Thus, this part of the rejection is overcome.

2) §112, second paragraph

Claims 2-3 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is respectfully traversed.

By way of the present amendments, this part of the rejection is rendered moot.

Issues under 35 U.S.C. §§102(b) and 102(e)

1) §102(b) anticipation

Claim 1 stands rejected under 35 U.S.C. §102(b) as being anticipated by Nakagawa *et al.* (US 2002/0197605). This rejection is respectfully traversed.

The Present Invention and its Advantages

The present invention is directed to an isolated DNA clone encoding a threonine importer from *Corynebacterium glutamicum* (claim 1) and a method for preparing a threonine-producing strain by defecting the threonine importer (claim 2).

Specifically, the present inventors have prepared a threonine-producing strain from *Corynebacterium glutamicum* based on the discovery that the concentration of intracellular threonine was reduced and the feedback inhibition and the transcription inhibition by threonine of a threonine biosynthetic gene could be prevented by blocking transport of threonine of high concentration into a cell, which was made it possible by defecting the threonine import pathway. That is, a threonine importer was identified and defected to produce the threonine-producing strain from *Corynebacterium glutamicum*. By way of the threonine-producing strain, the yield of L-threonine is increased. For instance, see page 2 of the present specification.

Distinctions between the Present Invention and the Cited Art

Nakagawa sequences the entire *Corynebacterium glutamicum* genome and Figure 1 shows the positions of typical genes. On the other hand, the present invention is drawn to a defined nucleic acid sequence corresponding solely to the threonine importer gene from *Corynebacterium glutamicum*, and not the entire genome. Therefore, the claimed invention is patentably distinct from the Nakagawa reference.

However, the Examiner has asserted that the claimed nucleic acid is encompassed by Nakagawa SEQ ID NO:1. Applicants respectfully disagree with this assertion for at least the following reasons.

First, nowhere in the disclosure of Nakagawa does it recite a threonine importer gene. Thus, Nakagawa is neither enabled nor satisfies the utility requirement. Therefore, Nakagawa cannot be used as a proper reference to reject the claimed invention. In this respect, Elan Pharmaceuticals, Inc. *v.* Mayo Foundation for Medical Education and Research, 68 USPQ2d 1373 (Fed. Cir. 2003) states that "to serve as an anticipating reference, the reference must enable that which it is asserted anticipate".

Second, Nakagawa has sequenced the entire *Corynebacterium glutamicum* genome while the present invention is drawn to a defined nucleic acid sequence corresponding solely to the threonine importer gene from *Corynebacterium glutamicum,* and not the entire genome. Among sequences defined in SEQ ID NO: 1 of Nakagawa, only a few (1254 bp) of which actually fall within the scope of the present claims. There is no indication that such sequences would be preferred or that one would select them, especially in combination as presently claimed. In fact, statistically speaking, the chance of selecting the claimed sequence falling within the scope both of the present claims, may be as high as one in one million.

Indeed, Nakagawa fails to provide a specific enough disclosure upon which those skilled in the art would be motivated to select the presently claimed sequences.

In this respect, case law exists supporting such an argument. Ex parte Kuhn, 132 USPQ 359 (POBA 1961) states that "the fact that a claimed product is within the broad field of the prior art and one might arrive at it by selecting specific items and conditions does not render the product obvious in the absence of some directions or reasons for making such selection." Similarly, In re Baird, 29 USPQ2d 1550 (Fed. Cir. 1994) states that "a compound within the scope of a generic formula which encompasses more than 100 million compounds cannot render

a product obvious absent some direction or reasons for selecting the substituents required to arrive at the compound.

In this context, the Examiner has done no more than, using Applicants' claims as a guide, select specific ingredients from the broad generic disclosures of Nakagawa. However, there is no direction or reason for making such selection, which is required in order for a valid *prima facie* case of either anticipation or obviousness.

Accordingly, the claimed invention is not anticipated by the Nakagawa reference.

2) §102(e) anticipation

Claim 4 stands rejected under 35 U.S.C. §102(e) as being anticipated by Pompejus *et al.* (US 6,696,561). This rejection is respectfully traversed.

Claim 4 recites "an isolated DNA clone encoding a threonine importer consisting of a sequence expressed by a continuous DNA sequence from the 1,772nd base to the 3,025th base among DNA sequences with the SEQ. ID. No. 1" (emphasis added).

Accordingly, Applicants respectfully submit that 81.8 % similarity or 99.8% local similarity of Pompejus to a region of nucleotides 1772 nd to 2810 th does not meet all of the limitations of claim 4. Specifically, claim 4 uses "consisting of" language and does not encompass a defined region of encoded by only nucleotides 1772 nd to 2810 th, but rather drawn to the entire region of the 1,772nd base to the 3,025th base among DNA sequences with the SEQ. ID. No. 1".

Therefore, claim 4 is not anticipated by the Pompejus reference.

Consequently, the claimed invention is not anticipated by the cited art and withdrawal of the §§102(b)/102(e) rejections is respectfully requested.

Conclusion

In view of the above remarks, Applicants believe the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Craig A. McRobbie Reg. No. 42,874 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By _____

Craig A. McRobbie
Registration No.: 42,874
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant